

**DETECTION OF DEAD GATEWAYS****ABSTRACT OF THE INVENTION**

5           A method, computer program product and system for detecting a first-hop dead gateway. In one embodiment, a method comprises the step of sending a TCP packet of data from an application of a sender host to a receiver host through a first gateway, where the first gateway is a first-hop away from the sender host. The method further comprises the step of TCP failing to receive an acknowledgment of received data from the receiver host. The method further comprises the step of deleting an ARP entry associated with the first gateway in the sender host. The method further comprises the step of establishing a new communication using the first gateway by the application or new application of the sender host. The method further comprises the step of sending an ARP request to the first gateway by the sender host. If the sender host receives a response from the first gateway, then the method further comprises the step of sending a TCP or non-TCP packet of data using the first gateway if the new communication was a TCP or non-TCP communication, respectively. If the sender host does not receive a response from the first gateway, then the method further comprises the step of selecting an alternative path through an alternative first-hop gateway in the routing table of the sender host. The application or new application of the sender host then sends the TCP or non-TCP packet of data using the alternative gateway if the new communication was a TCP or non-TCP communication, respectively.

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